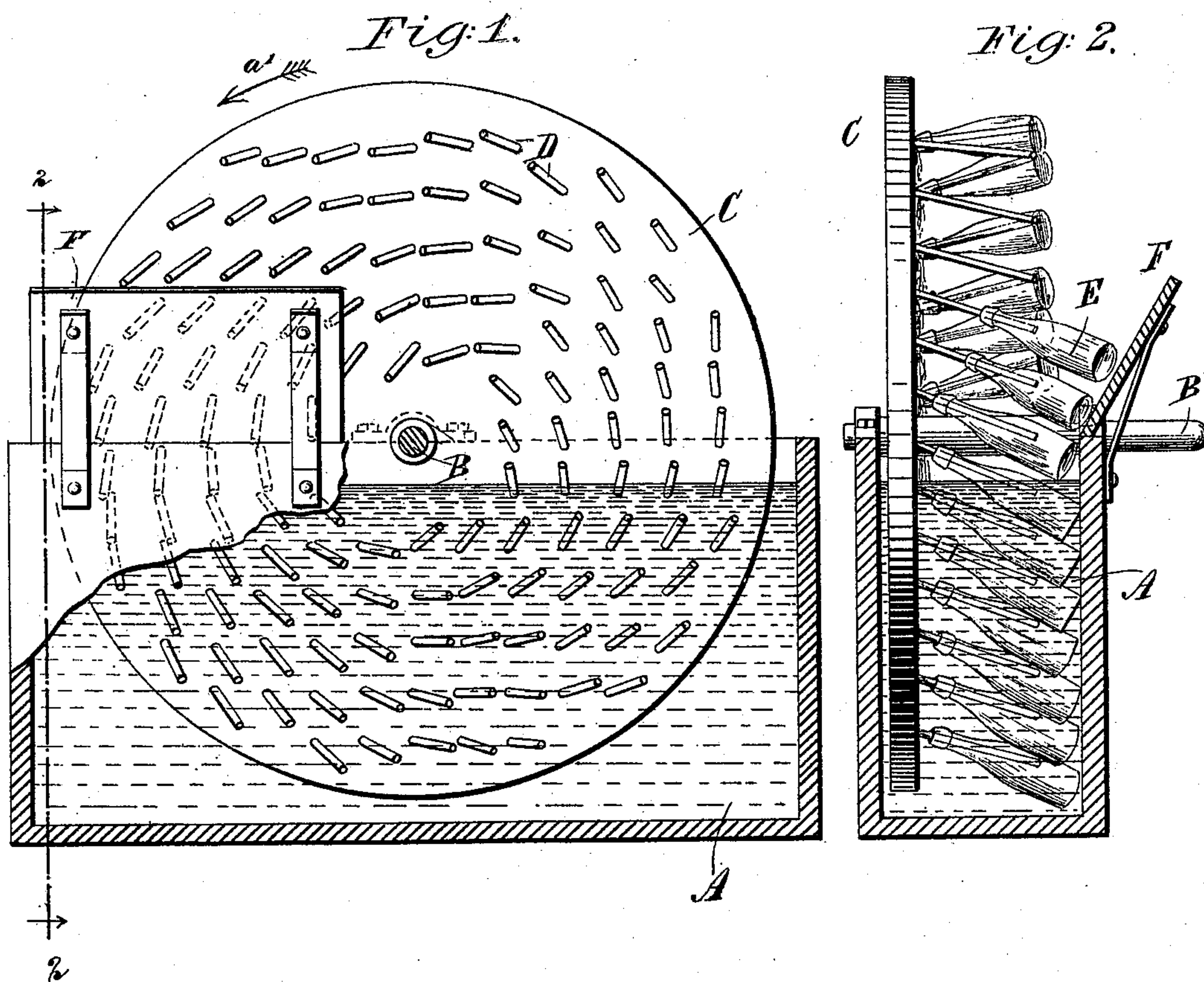


(No Model.)

E. KERSTEN.  
BOTTLE WASHER.

No. 582,505.

Patented May 11, 1897.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

EMIL KERSTEN, OF RICHMOND, VIRGINIA.

## BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 582,505, dated May 11, 1897.

Application filed May 21, 1896. Serial No. 592,401. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL KERSTEN, of Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Machines for Soaking and Sterilizing Bottles, of which the following is a full, clear, and exact description.

The object of this invention is to provide a new and improved machine for soaking and sterilizing bottles to facilitate and secure a thorough cleaning of the same both on the inside and on the outside, so as to permit of filling the bottles with safety with the desired liquid.

The invention consists principally of a wheel mounted to revolve and provided on its face with supports standing in an inclined position with relation to the face of the wheel.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a face view of the improvement with parts broken out. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1; and Fig. 3 is a detail showing part of the wheel, the support attached thereto, and a bottle on the support.

The improved machine is provided with a suitable tank A, adapted to receive the cleansing liquid, such as hot soda or like suitable solution, and on the upper end of the tank A, at or near the middle thereof, is journaled a transversely-extending shaft B, on which is secured a wheel C, adapted to extend with its lower half portion into the liquid contained in the tank A, as is plainly indicated in the drawings.

On the front face of the wheel C, which is preferably made in the shape of a disk, are secured supports D, made in the form of pins, short pipes, or the like, the said supports standing at an angle to the face of the wheel and to the shaft B, as is plainly shown in Figs. 1 and 2, the pins on the left side of the wheel holding the bottles E in a downward position, as shown in Figs. 2 and 3, while the pins on the right-hand side of the wheel hold

the bottles E upside down to permit their contents to run out and back in the tank A. The supports are placed suitable distances apart and each one is adapted to receive a bottle E, the latter being placed in position on the support on the left upper side of the wheel during the time these supports are out of contact with the liquid in the tank A.

On the front of the tank A and at the left side thereof is arranged a guide-board F, adapted to be engaged by the butt-ends of the bottles as the latter move downward into the liquid, so that the bottles are prevented from falling off of the supports while moving into the liquid contained in the tank. The tank is of such width as to prevent the bottles from sliding off of the supports during the time the bottles travel through the liquid in the tank.

The wheel may be operated by a crank connected to the shaft B or by any other suitable means. The bottles to be cleansed being placed on those supports that are above the liquid, the wheel is then turned in the direction of the arrow  $a'$ , so that the bottles will be moved into the liquid contained in the tank A, the bottles then being in an inclined position with the mouth uppermost, as is best shown in Fig. 2. Thus the bottles can readily fill with the cleansing liquid in the tank A, and the outside of the bottles are also subjected to the action of the liquid during the time they are moved through the same on the further rotation of the wheel C.

The bottles finally pass upward and out of the tank A on the right-hand side thereof, and in doing so they move into an inclined position with the mouths downward, so that the cleansing liquid in the bottles runs out and back into the tank. Each bottle thus soaked and sterilized is removed from the support as soon as it emerges from the sterilizing liquid and passes above the tank, and unclean empty bottles are placed on the supports on the wheel for treatment, as above described.

As shown in Fig. 3, I preferably use for the support of the bottles hollow pipes open at both ends and inserted in openings made in an inclined direction entirely through the wheel C, so that one open end of the said pipe is flush with the rear surface of the wheel, as



shown at D'. By this construction a counter flow of air and water is created and the cleansing of the bottles greatly facilitated. While the water is running into the bottle through that portion of the mouth not taken up by the pipe D the air will escape through the latter, and again while the water is running out of the bottle, when the latter has been inverted by the further revolution of the wheel C, the air will enter through the open pipe at D'.

It will be seen that by the arrangement described a large number of bottles can be readily soaked and sterilized to facilitate and secure a proper cleaning of the same on the inside as well as on the outside.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A machine for sterilizing and soaking bottles, comprising a tank adapted to receive a cleaning liquid, a wheel mounted to revolve and arranged to pass with its lower portion through said liquid, and provided with transverse inclined openings extending entirely therethrough, and pipes open throughout their lengths and inserted in said openings and arranged to receive and hold the bottles to be cleansed in an inclined position relative to the face of said wheel, substantially as set forth.

2. A machine for sterilizing and soaking bottles, comprising a tank adapted to receive

a cleansing liquid, a wheel mounted to revolve and adapted to pass with its lower portion through said liquid, supports secured to said wheel and inclined in the direction in which said wheel is designed to revolve, said supports being inserted in the necks of the bottles to be cleansed and holding said bottles in the inclined position relative to the face of said wheel, and a guide-board held on said tank and adapted to be engaged by the bottom of the bottles as the latter move down into said liquid, as and for the purpose set forth.

3. A machine for sterilizing and soaking bottles, comprising a tank adapted to receive a cleansing liquid, a wheel mounted to revolve and adapted to pass with its lower portion through said liquid, hollow pipes open at both ends and having one end inserted in openings extending entirely through said wheel, said pipes being inclined in the direction in which said wheel is designed to revolve and inserted in the necks of the bottles to be cleaned, whereby said bottles are held in an inclined position relative to the face of said wheel, and a guide-board held on said tank and adapted to be engaged by the bottoms of the bottles as the latter are moved down into said liquid, as and for the purpose set forth.

EMIL KERSTEN.

Witnesses:

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